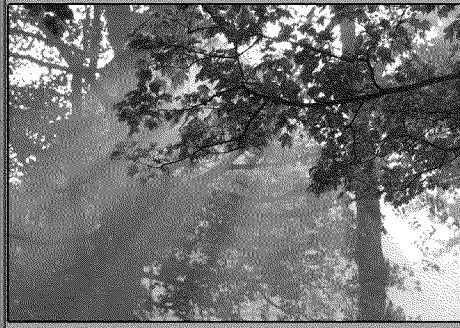
EPA CCR Update

ACAA 2018 Winter Meeting
January 31, 2018

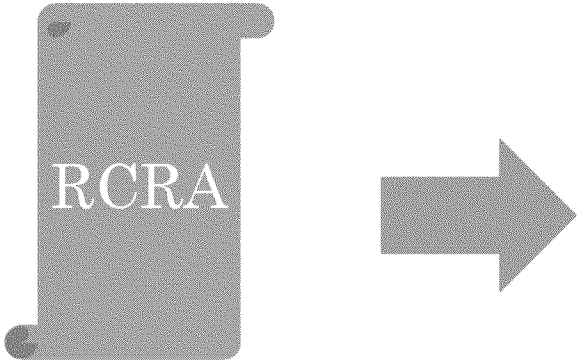
Barnes Johnson
Director
U.S. EPA Office of Resource Conservation & Recovery



Presentation Overview

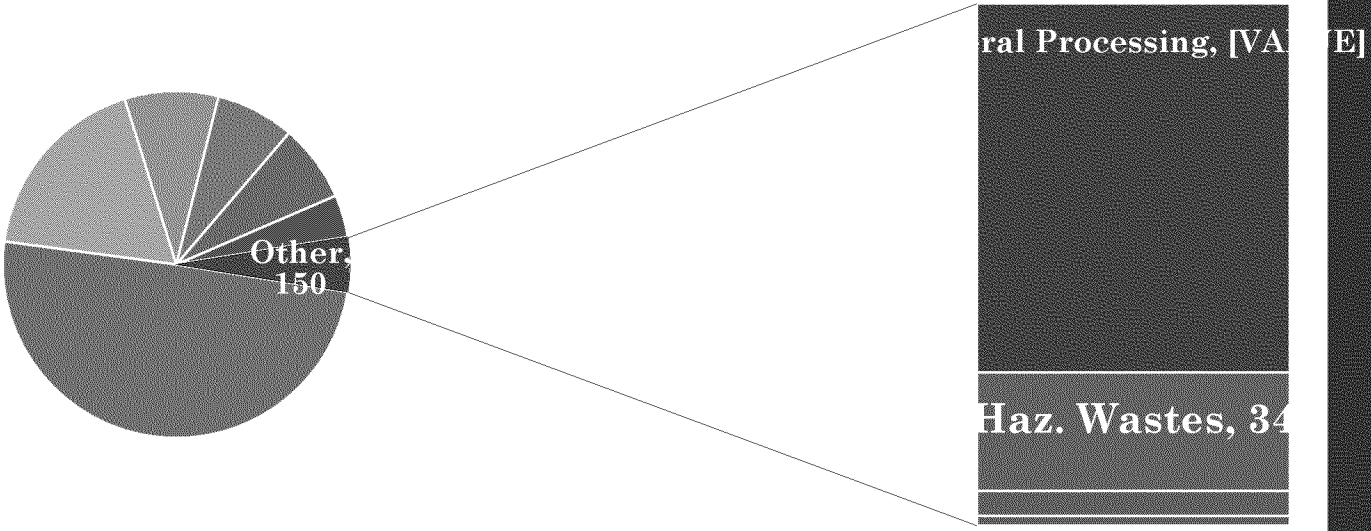
- ORCR Overview
- Coal Combustion Residuals (CCR) Rule
- Sustainable Materials Management (SMM) Program
- EPA Tools and Efforts to Support the Beneficial Use of Industrial Secondary Materials
- Questions and Answers

ORCR Overview



- Protect human health and the environment from potential hazards of waste disposal.
- Conserve energy and natural resources.
- Reduce the amount of waste generated.
- Ensure that wastes are managed in an environmentally sound manner.

U.S. Waste Generation (million short tons)
Total: 2.95 Billion Tons



*(without produced waters)

Benefits of RCRA

- Every year in the United States, we generate approximately 9 tons of waste per person.
- RCRA provides a framework for a $100-billion-dollar waste management industry directly employing 379,000 people.
- RCRA is a partnership with states to ensure that the more than 400,000 facilities that manage solid and hazardous wastes have the necessary controls to safeguard communities and the environment.
- The overall RCRA program produces economic benefits of $50B - $58B, while costs are estimated at $13.2B.

Recent Accomplishments and Efforts Underway

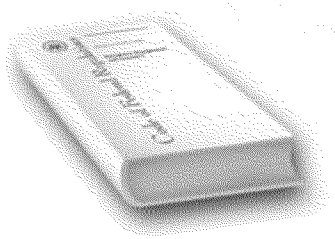
- Homeland Security
- Non-Hazardous Secondary Materials Rule
- Waste Tracking in Portfolio Manager
- Bioreactor Landfills
- Subtitle D Post Closure Care

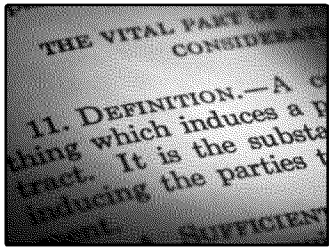
ENERGY STAR

Coal Combustion Residuals (CCR) Rule Update

CCR Rule: Overview

- Final Rule published in the Federal Register on April 17, 2015; went into effect in October 2015.
- Established nationally applicable minimum criteria under RCRA's nonhazardous waste program for the disposal of CCR in landfills and surface impoundments.
- Reaffirms that CCR being beneficially used (BU) is not regulated.
  - Provides a definition of BU to clarify the distinction between BU and disposal.





CCR Rule: Beneficial Use

Definition of Beneficial Use

1. The CCR must provide a functional benefit;
2. The CCR must substitute for the use of a virgin material, conserving natural resources that would otherwise need to be attained through practices such as extraction;
3. The use of CCR must meet relevant product specifications, regulatory standards, or design standards when available, and when such standards are not available, CCR must not be used in excess quantities; and

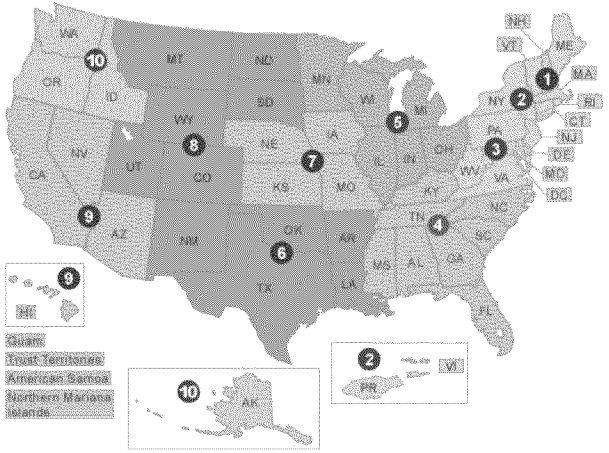
CCR Rule: Beneficial Use

Definition of Beneficial Use, cont'd…

4. When unencapsulated use of CCR involves placement on the land of 12,400 tons or more in non-roadway applications, the user must demonstrate and provide documentation upon request, that environmental releases to ground water, surface water, soil, and air are comparable to or lower than those from analogous products made without CCR, or that releases will be below relevant regulatory and health-based benchmarks for human and ecological receptors.

CCR Rule: Implementation

- CCR Implementation Workgroup
  - Regions participate in biweekly calls
  - Coordinate on issues or questions
- Training States and Regional staff
  - Successful Regional Trainings
  - Region 4 Training in February

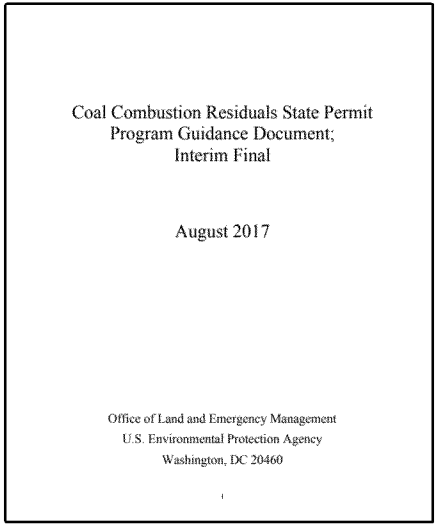


CCR Disposal Rule: WIIN Act & State Permit Programs

- Amended RCRA to allow States to submit CCR permit programs to EPA for approval.
- The state permit program must be at least "as protective as" the federal rule.
- EPA must implement a permit program in Indian Country.
- In "non-participating States" EPA implements a permit program if we receive appropriations to do so.
- ~ 20 states are interested in developing state permit programs.
- State program approval is judicially reviewable.

WATER INFRASTRUCTURE IMPROVEMENTS FOR THE NATION (WIIN) ACT

CCR Rule: State Permit Program Guidance


Coal Combustion Residuals State Permit Program Guidance Document; Interim Final

August 2017

Office of Land and Emergency Management
U.S. Environmental Protection Agency
Washington, DC 20460

- Interim final guidance document published in August 2017
- Modeled after 40 CFR Part 239, permit program requirements for MSW landfills
- Expected to be a "living document"
- 4 Chapters:
  - Q's & A's about the WIIN Act & state permit approval process
  - Checklists to aid states in program development

CCR Rule: Litigation

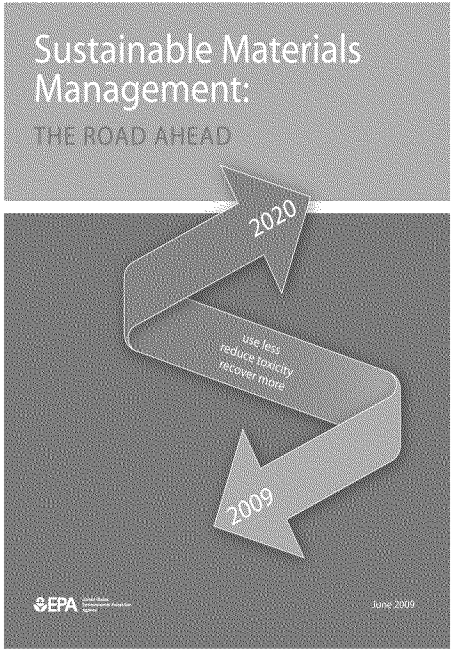
- Three issues under litigation were remanded back to EPA:
  1. Adding boron to the list of constituents triggering assessment monitoring
  2. Reworking the vegetative height requirement
  3. Clarifying non-groundwater releases may not require full corrective action procedures.
- Lack of capacity for non-CCR waste streams
- Issues awaiting court decisions:
  - Authority over "inactive" units
  - 12,400-ton threshold
  - CCR Piles
- Oral Argument was held on November 20th, 2017
  - The court has not yet ruled

CCR Rule: Remand Rule

- **11/15 Status Report:**
  - **Phase 1:** Proposal by March 2018 and a final by or before June 2019
  - **Phase 2:** Proposal by September 2018 and final by or before December 2019
- **Issues:**
  - **Phase 1:** Boron, vegetative height, small releases are being addressed.
  - **Phase 2:** Will include issues for which EPA determines that a regulatory change may be appropriate.

Sustainable Materials Management Program

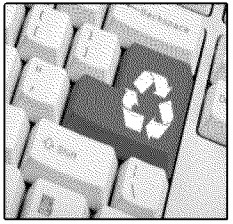
U.S. EPA Transition to SMM



- "Sustainable Materials Management: The Road Ahead" used life cycle assessment to evaluate material use across the US economy.
- A systems-based approach is needed to effectively and efficiently:
  - Use materials
  - Minimize negative environmental impacts
  - Minimize unintended consequences of actions

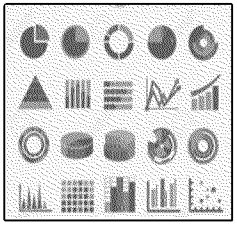
EPA's SMM Strategic Plan 2017-2022

The Built Environment

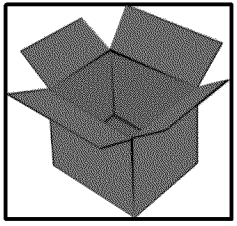


Sustainable Electronics Management

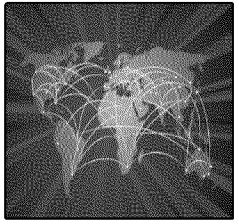
Sustainable Management of Food



Measurement



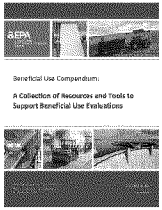
Sustainable Packaging



International Efforts

SMM Tools and Strategies

Tools

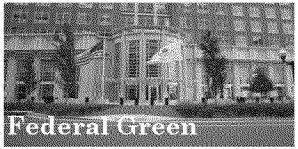


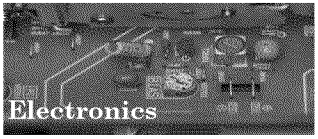
ENERGY STAR®
PortfolioManager®

Guide to Conducting Student Food Waste Audits
A Resource for Schools

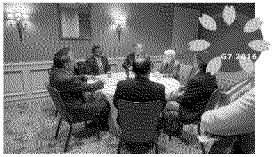
WaRM

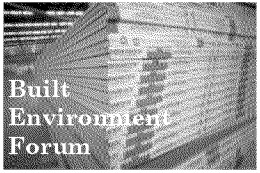
Challenges





Convene





Partnerships

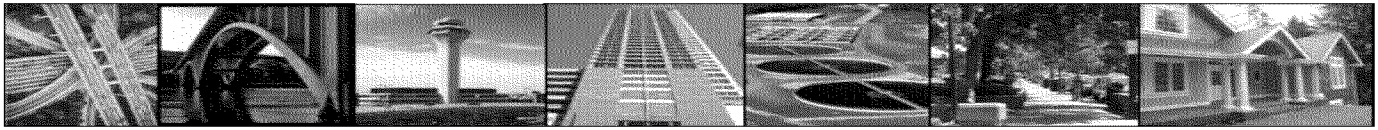
USDA

FURTHER WITH FOOD
Center for Food Loss and Waste Solutions

FDA

WRAP RECYCLING
W.R.A.P.
ACTION PROGRAM

The Built Environment

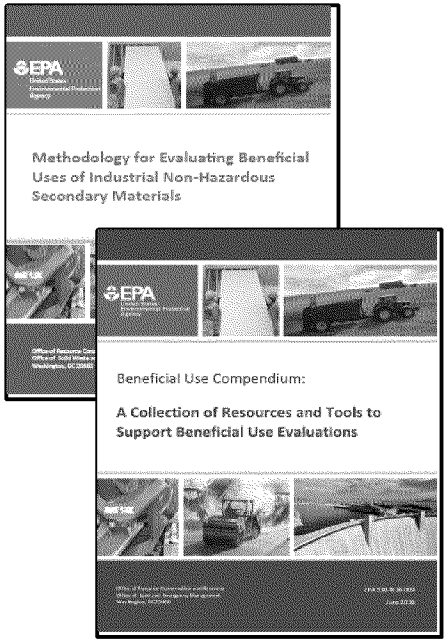


- EPA's unique role is to help address barriers to beneficial use, provide data and technical assistance to states and other stakeholders. Historic efforts include:
  - Comprehensive Procurement Guidelines recommendations for cement and concrete products (1995)
  - Coal Combustion Products Partnership (2001-2008)
  - CCR BU Evaluation: Fly Ash Concrete & FGD Gypsum Wallboard (2014)
  - Risk Assessment of Spent Foundry Sands In Soil-Related Applications (2014)
  - Construction & Demolition materials and industrial waste measurement
- Built Environment Stakeholder Forum

EPA Tools and Efforts to Support Beneficial Use of Secondary Materials

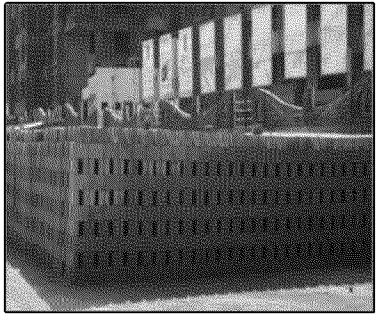
Tools to Evaluate Potential Impacts from Using Secondary Materials

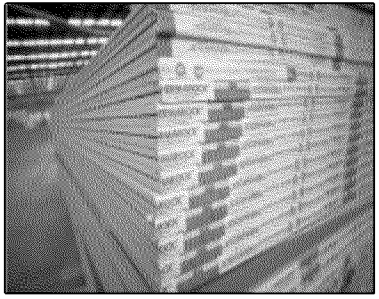
- EPA developed two key documents:
  - *Methodology for Evaluating the Beneficial Use of Industrial Non-Hazardous Secondary Materials* (BU Methodology); and
  - *Beneficial Use Compendium: A Collection of Resources and Tools to Support Beneficial Use Evaluations* (BU Compendium).
- These two documents together are intended to:
  - Help improve consistency and quality of beneficial use evaluations.
  - Identify key questions to ask when designing or reviewing evaluations.
  - Provide a list of tools and other resources.



BU Evaluation: Fly Ash Concrete and FGD Gypsum Wallboard

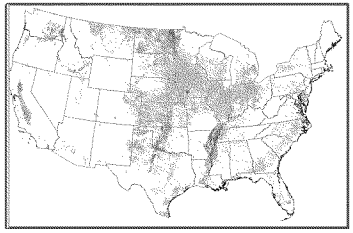
- Evaluates the two largest encapsulated BUs of CCR:
  - Fly ash used in concrete, and
  - FGD gypsum used in wallboard.
- Concluded that environmental releases are comparable to or lower than those from analogous non-CCR products, or are at or below relevant regulatory and health-based benchmarks.

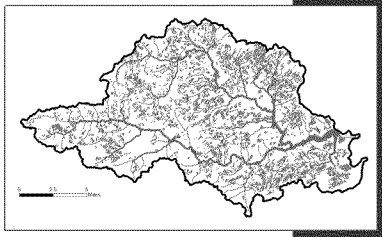




BU Evaluation: FGD Gypsum on Agricultural Fields

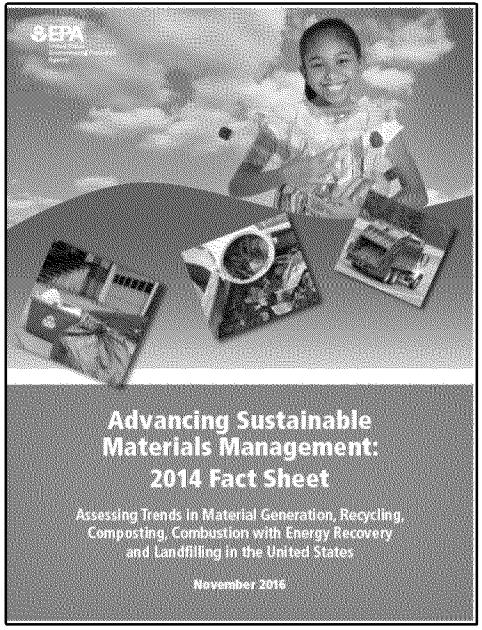
- Currently working with USDA to apply the BU Methodology to FGD gypsum used as an agricultural amendment.
- One of the most complex modeling efforts conducted by ORCR to-date.
- Currently scheduled for completion in 2018.





Materials Measurement

- Advancing SMM: Facts and Figures Report.
  - Expanded to include C&D generation estimates; will include management pathways.
  - Improving measurement of food loss and waste.
- New efforts underway to create new estimates for industrial secondary materials.



Industrial Secondary Materials Measurement

- 6 different categories of industrial materials:
  - CCRs Iron and Steel Slag, Spent Foundry Sands, Mining, Mineral Processing, Cement Kiln Dust, and Biosolids
- Utilizing publically available data:
  - Government sources
  - Industry Trade Associations
  - Academic Papers
- Current status:
  - Investigating sources of data
  - Discussions on best way to characterize materials
  - Currently anticipating estimations by the end of the 2018

Looking towards the future…

Thank you!

Barnes Johnson, Director

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